

What is claimed is:

1. A radar apparatus detecting a target by transmitting a pulse signal, comprising:

5 a first signal generating unit generating a first signal, which becomes a base of generation of a transmission pulse;

10 a second signal generating unit generating a second signal that has a frequency which is a multiple or a submultiple of the first signal, a phase angle of 0 for the second signal intermittently matching that for the first signal;

15 a control pulse generating unit generating a control pulse signal by delaying the second signal; and

15 a gate unit performing a gate operation for a reception signal by using the control pulse signal.

2. The pulse radar apparatus according to claim 1, further comprising:

20 a detecting unit detecting an output of said gate unit; and

25 a distance calculating unit calculating a distance to a target by using an output of said detecting unit when said control pulse generating unit changes an amount of a delay.

3. The pulse radar apparatus according to claim 1, further comprising

5 a modulation signal generating unit generating a pulse from a signal which becomes the base of generation of the transmission pulse, and generating a modulation signal for generating a transmission pulse by band-restricting a spectrum range of the pulse.

10 4. A pulse radar apparatus detecting a target by transmitting a pulse signal, comprising:

a signal delaying unit delaying a signal which becomes a base of generation of a transmission pulse;

15 a control pulse generating unit generating a control pulse signal by using the delayed signal;

a gate unit performing a gate operation for a reception signal by using the control pulse signal; and

20 a reflection signal detecting unit detecting a reflection signal from a target which exists in a distance corresponding to a delay time by using an output of said signal delaying unit based on an output of said gate unit.

25 5. The pulse radar apparatus according to claim 4, further comprising

a distance calculating unit calculating a distance to a target by using an output of said reflection signal detecting unit when said signal delaying unit changes a delay amount.

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6. The pulse radar apparatus according to claim 4, further comprising

10 a modulation signal generating unit generating a pulse from a signal which becomes the base of generation of the transmission pulse, and generating a modulation signal for generating a transmission pulse by band-restricting a spectrum range of the pulse.

7. A pulse radar apparatus detecting a target 15 by transmitting a pulse signal, comprising:

a first signal generating unit generating a first signal, which becomes a base of generation of a transmission pulse;

20 a second signal generating unit generating a second signal that has a frequency which is a multiple or a submultiple of the first signal, a phase angle of 0 for the second signal matching the first signal at least intermittently;

25 a control pulse generating unit generating a control pulse signal by delaying the second signal;

a gate unit performing a gate operation for a reception signal by using the control pulse signal;

a signal delaying unit delaying the first signal according to a delay amount of the control pulse signal
5 generated by said control pulse generating unit; and

a reflection signal detecting unit detecting a reflection signal from a target which exists in a distance corresponding to a delay time by using an output of said signal delaying unit based on an output of said gate
10 unit.

8. The pulse radar apparatus according to claim 7, further comprising

a distance calculating unit calculating a distance
15 to a target by using an output of said reflection signal detecting unit when said control pulse generating unit changes the delay amount.

9. The pulse radar apparatus according to claim
20 7, further comprising

a modulation signal generating unit generating a pulse from a signal which becomes the base of generation of the transmission pulse, and generating a modulation signal for generating a transmission pulse by
25 band-restricting a spectrum range of the pulse.

10. A pulse radar apparatus detecting a target by transmitting a pulse signal, comprising:

a pulse transmitting unit outputting a transmission pulse signal by using a pulse signal generated from a signal which becomes a base of generation of a transmission pulse and a frequency-modulated continuous wave;

10 a control pulse generating unit generating a control pulse signal by delaying the signal which becomes the base of generation of a transmission pulse;

a gate unit performing a gate operation for a reception signal by using the control pulse signal; and

15 a modulation controlling unit controlling a frequency modulation width in frequency modulation, and/or a repetitive frequency of the modulation in response to a signal delay amount generated by said control pulse generating unit.

20 11. The pulse radar apparatus according to claim 10, further comprising:

a detecting unit detecting an output of said gate unit; and

25 a distance calculating unit calculating a distance to a target by using an output of said detecting unit

when said control pulse generating unit changes the delay amount.

12. The pulse radar apparatus according to claim
5 10, further comprising

a modulation signal generating unit generating a modulation signal for generating a transmission pulse by band-restricting a spectrum range of the pulse signal generated from the signal which becomes the base of
10 generation of a transmission pulse, and giving the generated signal to said pulse transmitting unit.